

Serial No.: 09/682,540
Confirmation No.: 5619
Applicant: DANIELSSON, Mats
Atty. Ref.: 06730.0011.NPUS00

AMENDMENTS TO THE CLAIMS:

Please amend claims 16, 17, 23, 27, 28, 36, 40 and 41 as follows:

1-15 (Canceled)

16. (Currently Amended) A method for scanning in an X-ray apparatus comprising:
an essentially planar member of a material non-transparent to X-rays, having an elongated slot
formed therein to provide a collimator for X-rays,

an array of detectors provided in communication with said slot[s] and arranged to detect
X-rays and for providing a signal representing the intensity of said X-rays imaging thereon,
means for moving a beam directing member and an object to be examined relative to
each other,

wherein said array of detectors comprises detector arrangements arranged substantially in
parallel, ~~arranged detector arrangements~~ consisting of ~~one or several~~ at least one carrying
members, ~~each arranged on at least one face~~ with detectors comprising a plurality of sensors
provided on a substrate, and wherein said detectors are arranged substantially edge to edge and
side by side on at least least one side of said at least one carrying member,

wherein the method comprises the steps of:

~~arranging a first part of collimators before start of the scanning in a field of view while
the second part of the collimators are outside the field of view,~~

starting ~~a~~ the scan from a first position and said collimator[s] and said detectors having a
first speed,

bringing ~~the~~ said collimator[s] and said detectors to a maximum, substantially constant
speed when all of said collimator[s] and said detectors are in a the field of view;[,] ~~and~~

~~when the first collimator is outside the field of view, bringing the said collimators and
detectors to a third speed, wherein the further step of stopping the scan when said second part of
the collimators are outside the field of view.~~

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_____ wherein the further step of stopping the said scan when said second part of the collimators ~~are~~ is outside the said field of view.

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17. (Currently Amended) A method for scanning in an X-ray apparatus comprising:
an essentially planar member of a material non-transparent to X-rays, having an elongated slot
formed therein to provide a collimator for X-rays,

an array of detectors provided in communication with said slot[s] and arranged to detect
X-rays and for providing a signal representing the intensity of said X-rays imaging thereon,
means for moving a beam directing member and an object to be examined relative to
each other,

wherein said array of detectors comprises detector arrangements arranged substantially in
parallel, ~~arranged detector arrangements~~ consisting of ~~one or several~~ at least one carrying
members, ~~each arranged on at least one face~~ with detectors comprising a plurality of sensors
provided on a substrate, and wherein said detectors are arranged substantially edge to edge and
side by side on at least one side of said at least one carrying member,

wherein the method comprises the steps of:

~~arranging a first part of collimators before start of the scanning in a field of view while
the second part of the collimators are outside the field of view,~~

starting ~~a~~ the scan from a first position and said collimator[s] and said detectors having a
first speed,

bringing ~~the~~ said collimator[s] and said detectors to a maximum, substantially constant
speed when all of said collimator[s] and said detectors are in the field of view;[,] and

~~when the first collimator is outside the field of view,~~ bringing the said collimator[s] and
said detectors to a third speed, wherein an acceleration time before ~~the~~ said scan reaches a
maximum speed and a deceleration time before ~~it~~ said scan stops is determined in such a way
that ~~the 10~~ parts of an image, where the acceleration and ~~retardation~~ deceleration take[s] place,
obtain[s] substantially a same photon statistics as the rest of ~~the~~ said image.

18-22. (Canceled)

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23. (Currently Amended) The method according to claim 17, further comprising providing an arrangement for detecting X-ray radiation, said arrangement comprising:

a carrying member having detectors on a side thereof, said detectors including a plurality of sensors provided on a substrate;

said detectors being arranged substantially edge-to-edge and side-by-side in at least one row on said side of said carrying member; and

said detectors comprising a sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident X-ray beams, and wherein at least two detectors are arranged in at least two levels, said levels being displaced relative one to another ~~the others~~ and such that an inactive section of at least one detector is overlapped with an active section of said [an]other detector.

24. (Previously presented) The method according to claim 23 wherein said sensor plane is arranged in parallel to incident X-ray beams.

25. (Previously presented) The method according to claim 23 wherein said carrying member is tilted to arrange said sensor plane in said angle.

26. (Previously presented) The method according to claim 23 wherein said detector is arranged on a supporting member.

27. (Currently Amended) The method according to claim 23 wherein ~~the~~ said detectors ~~are further comprised of~~ comprise a scintillator optically connected to a device selected from the group consisting of a charge coupled device (CCD), silicon diodes, and a gaseous detector, such as a parallel plate chamber where the gas volume is oriented edge-on to the incident X-ray's.

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28. (Currently Amended) The method according to claim 17, further comprising providing an X-ray apparatus comprising:

an essentially planar member of a material non-transparent to X-rays, having an elongated slot formed therein,

an array of detectors provided in communication with said slot[s] and arranged to detect X-rays and for providing a signal representing the intensity of said X-rays imaging thereon,

a moving arrangement configured to move a beam directing member relative to an object to be X-ray examined;

said array of detectors ~~array~~ further comprising individual detectors positioned substantially in parallel with at least one carrying member;

each detector arranged on a face of said at least one [a] carrying member and comprising a plurality of sensors provided on a substrate, said individual detectors being arranged substantially edge-to-edge and side-by-side on said face of said carrying member; and

each detector comprising a sensor plane, said sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident x-ray beams.

29. (Previously presented) The method according to claim 28 wherein at least two detectors are arranged in at least two levels, said levels being displaced relative one to the others and such that an inactive section of at least one detector is overlapped with an active section of another detector.

30. (Previously presented) The method according to claim 28 wherein each of said detectors has a sensor plane, said sensor plane being arranged at an angle other than perpendicular to incident X-ray beams.

31. (Previously presented) The method according to claim 28 wherein each of said detectors has a sensor plane, said sensor plane being arranged in parallel with incident X-ray beams.

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32. (Previously presented) The method according to claim 28 wherein said beam directing member includes slots arranged in at least two rows, and said slots in each row are displaced relative each other.

33. (Previously presented) The method according to claim 28 wherein said beam directing member is one of a refracting and focusing member.

34. (Previously presented) The method according to claim 28 further comprising:
means for acquiring data from said detector arrays at intervals corresponding to a fraction of a width of said detector arrays.

35. (Previously presented) The method according to claim 34 wherein said sensors of said detector arrays are made of silicon wafers oriented substantially edge-on to incident X-rays.

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36. (Currently Amended) The method according to claim 17, further comprising providing an X-ray apparatus comprising:

an essentially planar member of a material non-transparent to X-rays, having an elongated slot formed therein,

a detector array provided in communication with said slot[s] and arranged to detect X-rays and for providing a signal representing the intensity of said X-rays imaging thereon,

a moving arrangement configured to move a beam directing member relative to an object to be X-ray examined;

said detector array further comprising individual detectors positioned substantially in parallel with at least one carrying member;

each detector arranged on a face of said at least one [a] carrying member and comprising a plurality of sensors provided on a substrate, said individual detectors being arranged substantially edge-to-edge and side-by-side on said face of said carrying member; and

each detector comprising a sensor plane, said sensor plane being substantially parallel to a surface of said carrying member and said carrying member being arranged so that said sensor plane is angularly oriented otherwise than perpendicular to incident x-ray beams.

starting a scan;

positioning said slot[s] and corresponding detectors substantially outside a field of view when the scan starts;

passing ~~substantially~~ all said slot[s] and corresponding detectors over ~~and~~ said object to be X-rayed and thus establishing said field of view;

measuring scan X-ray fluxes together with position coordinates for all detectors; and

terminating the scan only after all said slot[s] and said corresponding detectors are substantially outside the said field of view.

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37. (Previously presented) The method according to claim 36, further comprising:

incrementing the scanning at least a distance corresponding to a fraction of a distance of the detectors arrangements.

38. (Previously presented) The method according to claim 37 wherein the scan is continuous and a readout of data is performed at intervals corresponding to a fraction of a distance between the detector arrangements.

39. (Previously presented) The method as claimed in claim 37 wherein readout data for each increment and for each sensor array is stored as data arrays, and wherein said stored data for each sensor array is separately combined to form an image, and wherein images obtained by each sensor array are superposed to form a final image.

40. (Currently Amended) A method for scanning in an X-ray apparatus comprising:

providing an essentially planar member of a material non-transparent to X-rays; having an elongated slot formed therein to provide a collimator for X-rays, an array of detectors provided in communication with said slot[s] and arranged to detect X-rays and for providing a signal representing the intensity of said X-rays imaging thereon, means for moving a beam directing member and an object to be examined relative to each other, wherein said array of detectors comprises detector arrangements arranged substantially in parallel, ~~arranged detector arrangements~~ consisting of ~~one or several~~ at least one carrying members, ~~each arranged on at least one face~~ with detectors comprising a plurality of sensors provided on a substrate, and wherein said detectors are arranged substantially edge to edge and side by side on at least one side of said at least one carrying member,

~~—arranging a first part of collimators before start of the scanning in a field of view while the second part of the collimators are outside the field of view,~~

starting ~~a~~ the scan from a first position and said collimator[s] and said detectors having a first speed,

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41. (Currently Amended) The method according to claim 40, further comprising:

bringing ~~the~~ said collimator[s] and said detectors to a maximum, substantially constant speed when all of said collimator[s] and said detectors are in the field of view; and

decelerating ~~the~~ said collimator[s] and said detectors to a third speed ~~when the first said collimator is outside the field of view.~~